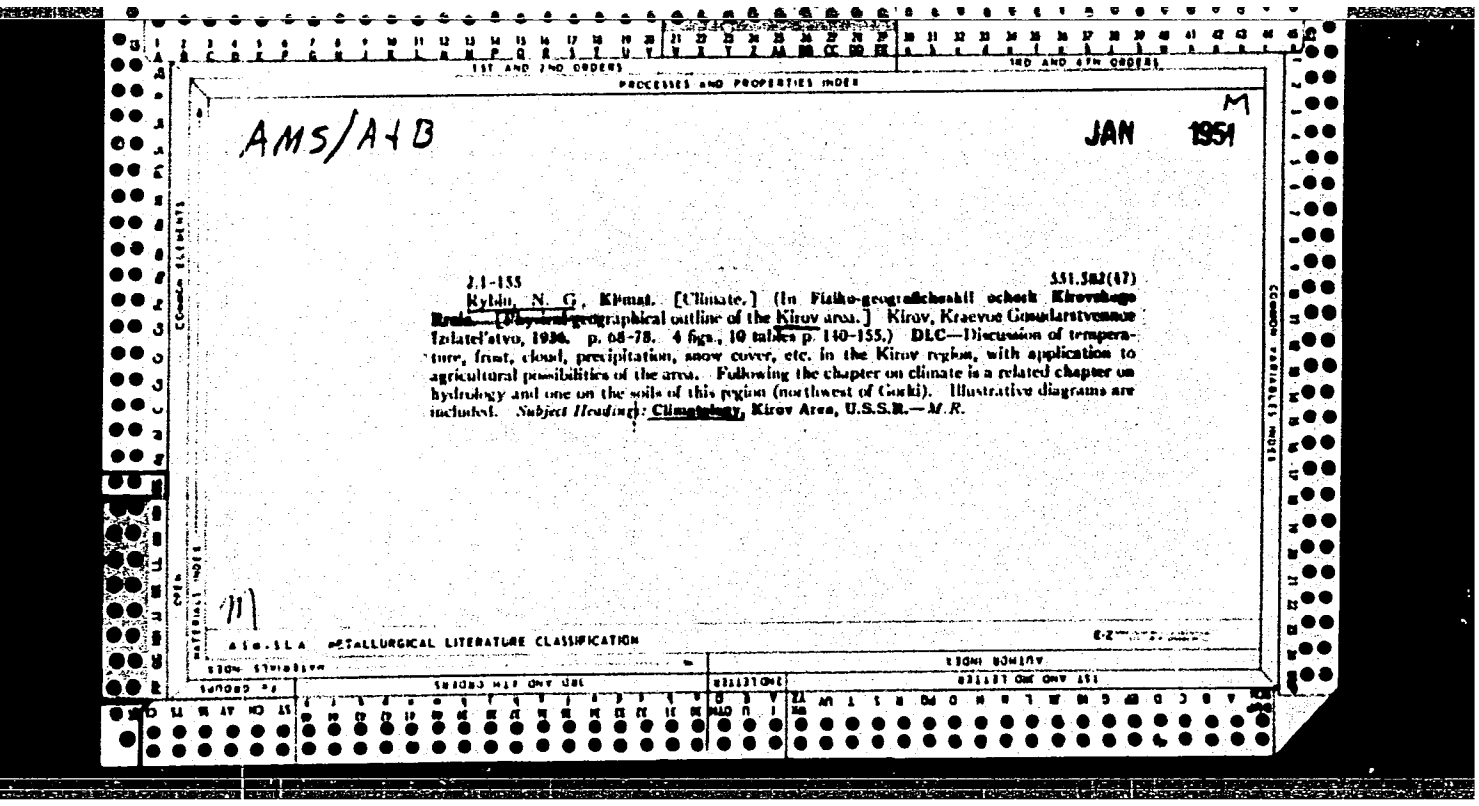
RY[illegible], N.G.

RY[illegible], N.G. Fiziko-geograficheskii ocherk Kirovskogo Kraia. Kirov, Kraevoe gos. izk-vo, 1936. 158 p.

DLC: TC886.M6A5 1936

SO: LC, Soviet Geography, Part II, 1951, Unclassified



PROCESSES AND PROPERTIES INDEX

AMS/AHB

JAN 1951

551.582(47)

J.1-155

Rylin, N. G., Klimat. [Climate.] (In Fiziko-geograficheskii ocherk Kirovskogo Kraia. [Physical-geographical outline of the Kirov area.] Kirov, Kraevoe Gosudarstvennoe Izdatel'stvo, 1936. p. 68-78. 4 figs., 10 tables p. 140-155.) DLC—Discussion of temperature, frost, cloud, precipitation, snow cover, etc. in the Kirov region, with application to agricultural possibilities of the area. Following the chapter on climate is a related chapter on hydrology and one on the soils of this region (northwest of Gorki). Illustrative diagrams are included. *Subject Heading:* Climatology, Kirov Area, U.S.S.R.—*M.R.*

A 56-51 A METALLURGICAL LITERATURE CLASSIFICATION

RYBIN, N.G., mashinist-instruktor

Our experience in operating VL22^{M} electric locomotives. Elek. i tepl. tiaga 4 no.10:38-41 O '60. (MIRA 13:10)

1. Depo Moskva-Sortirovochnaya Ryazanskaya.
(Electric locomotives)

RYBIN, N.I., inzh.

Determining the specific expenditure of explosives for the driving of tunnels. Transp. stroi. 14 no.10:41-43 O '64.
(MIRA 18:3)

RYBIN, N.I., inzh.; SHLYAPIN, K.B., kand. tekhn. nauk

Ways to improve boring and blasting in tunnel construction.
Transp. stroi. 13 no.5:57-59 My '63. (MIRA 16:7)

(Tunneling)

RYBIN, N.I., inzh.

Preventing dust in boring holes under permafrost conditions.
Bezop.truda v prom. 3 no.9:10-11 S '59. (MIRA 13:2)
(Mining engineering--Safety measures)
(Frozen ground)

RYBIN, N.I., inzh.

Injector used for grouting with rapid-hardening mortar. Transp. stroi. 9 no.1:56-57 Ja '59. (MIRA 12:2)
(Injectors) (Grouting)

RYBIN, N.I., inzh.

Characteristics of the construction of tunnels in permanently frozen fractured rock. Transp. stroi. 13 no.1:44-46 Ja '63 (MIRA 18:2)

RYBIN, N. N.

"Bulgaria (Physical and Geographical Characteristics)." Cand Geog Sci, Moscow Order of Lenin State U imeni M. V. Lomonosov, Moscow, 1955. (KL, No 16, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

TOKMAKOV, A.K.; IGNATENKO, N.G.; BONDARENKO, Ya.I.; DAGAYEVA, T.K.; RYBIN, N.N.; KOZHURINA, M.S.; KUNITSA, A.N.; ZHUPANSKIY, Ya.I.; BUTKOVSKIY, V.A.

In memory of Boris Nikolaevich Vishnevskii, 1891-1965. Izv. Vses. geog. ob-va 97 no.4:390-391 Jl-Ag '65. (MIRA 18:8)

TSYS', P.N.; KALESNIK, S.V.; SOKOLOV, N.N.; CHOCHIA, N.S.; PROTOPOPOV, A.P.; ZABELIN, I.M.; GVOZDETSKIY, N.A.; YEFREMOV, Yu.K.; KARA-MOSKO, A.S.; KOZLOV, I.V.: SOLNTSEV, N.A.; ISACHENKO, A.G.; ARMAND, D.L.; MIROSHNICHENKO, V.P.; PETROV, K.M.; KAZAKOVA, O.N.; MIKHAYLOV, N.I.; PARMUZIN, Yu.P.; GERENCHUK, K.I.; MIL'KOV, F.N.; TARASOV, F.V.; NIKOLAYEV, V.N.; SOBOLEV, L.N.; RYBIN, N.N.; DUMIN, B.Ya.; IGNAT'YEV, G.M.; MEL'KHEYEV, M.N.; SANEBLIDZE, M.S.; VASIL'YEVA, I.V.; PEREVALOV, V.A.; BASALIKAS, A.B.

Discussion at the conference on studying land forms. Nauk. zap. L'viv. un. 40:231-267 '57. (MIRA 11:6)
1.L'vovskiy gosudarstvennyy universitet (for TSys', Gerenchuk, Dumin). 2.Laboratoriya aerometodov AN SSSR, Leningrad (for Sokolov, Miroshnichenko, Petrov). 3.Institut geografii AN SSSR, Moskva (for Armand, Sobolev). 4.Gosudarstvennyy universitet, Voronezh (for Mil'kov, Tarasov). 5.Leningradskiy gosudarstvennyy universitet (for Chochia, Isachenko, Kazakova). 6.Komissiya okhrany prirody AN SSSR, Moskva (for Protopopov). 7.Gosudarstvennyy universitet, Chernovtsy (for Rybin). 8.Gosudarstvennyy universitet, Irkutsk (for Mel'kheyev). 9.Gosudarstvennyy pedagogicheskiy institut im. V.I. Lenina, Moskva (for Vasil'yeva). 10.Bol'shaya Sovetskaya Entsiklopediya (for Zabelin). 11.Gosudarstvennyy universitet, Tbilisi (for Saneblidze). 12.Moskovskiy gosudarstvennyy universitet (for Gvozdetskiy, Solntsev, Mikhaylov, Parmuzin, Nikolayev, Ignat'yev). 13.Torgovo-ekonomicheskiy institut, L'vov (for Perevalov). 14.Gosudarstvennyy institut im. Kapsukasa, Vil'nyus (for Basalikas). 15.Muzey zemlevedeniya Moskovskogo gosudarstvennogo universiteta (for Yefremov, Kozlov). 16.Srednyaya shkola No.13, Kiyev (for Kara-Mosko). (Physical geography)

RYBIN, N.S.; LOKSHIN, Ya.Yu.; SABUROV, N.V., prof., spetsred.; RYZHOVA, M.S., red.; GOTLIB, E.M., tekhn.red.

[Equipment for producing dried fruits] Oborudovanie dlia proizvodstva sushenykh fruktov. Moskva, Pishchepromizdat, 1957. 59 p. (Obmen peredovym tekhnicheskim opytom). (MIRA 11:12)
(Fruit--Drying) (Drying apparatus)

RYBIN, N.S.

Pneumatic malt chamber. N. S. Rybin and N. I. Antonov. U.S.S.R. 104,967, Feb. 25, 1957. Details of construction are given. M. H.

RYBIN, N.S.; PETKEVICH, V.P.

Production line for groats concentrates in a standard vegetable drying plant. Kons. i ov. prom. 12 no.1:4-6 Ja '57. (MLRA 10:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut konservnoy i ovoshchesushil'noy promyshlennosti.
(Barley) (Millet) (Food, Concentrated)

RYBIN, N.S.; PETKEVICH, V.P.

Organization of tomato processing stations. Kons. i ov. prom. 12 no.2: 8-9 F '57. (MIRA 10:6)

1. Vsesoyuznyy nauchno issledovatel'skiy institut konservnoy i ovoshchesushil'noy promyshlennosti.
(Tomatoes)

RYBIN, N.S.; PETKEVICH, V.P.

Testing of steam-conveyor and tower-type dryers for the production of food concentrates. Kons. i ov. prom. 13 no.9:20-22 S '58. (MIRA 11:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut konservnoy i ovoshchesushil'noy promyshlennosti.
(Drying apparatus) (Food--Drying)

RYBIN, P.P.

One feature of a Nekrasov-Nazarov sequence. Uch. zap. Kaz. un. 117 no.9:11-13 '57. (MIRA 13:1)

1.Kazanskiy gosudarstvennyy universitet im. V.I. Ul'yanova-Lenina. Kafedra matematicheskogo analiza.
(Sequences (Mathematics))

RYBIN, P.P.

RYBIN, P.P.

Particular solutions of a linear, integral, perturbation equation [with summary in English]. Vest. LGU no.19:30-34 '57. (MIRA 11:1)
(Integral equations)

RYBIN, P.P

20-3-9/59

AUTHOR: Rybin, P.P.

TITLE: On the Convergence of Series Obtained in Solving Non-Linear Integral Equations (O skhodimosti ryadov, poluchayemykh pri reshenii nelineynykh integral'nykh uravneniy)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 3, pp. 458 - 461 (USSR)

ABSTRACT: This paper examines the nonlinear integral equation $\varphi(x) = \int_0^1 K(x, y, \varphi(y), \lambda)dy$. The function $K(x, y, \varphi, \lambda)$ be continuous with regard to all variables as well as analytical with regard to φ and λ. The representation

$K(x, y, \varphi, \lambda) = \sum_{i,j=0}^{\infty} A_{ij}(x, y)\, \varphi^i \lambda^i$ with $|A_{ij}(x, y)| < B_{ij}$

shall be valid and the functions $A_{ij}(x, y)$ shall be continuous. The series $B(\varphi, \lambda) = \sum_{i,j=0}^{\infty} B_{ij}\, \varphi^i \lambda^j$ shall converge at $|\varphi| < \varphi_1, |\lambda| < \varphi_2$. Moreover $A_{oo}(x, y) = 0$ shall apply. The author gives some general principles on the convergence of the

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20-3-9/59

On the Convergence of Series Obtained in Solving Non-Linear Integral Equations

formal solutions $\varphi(x) = \lambda \varphi_1(x) + \lambda^2 \varphi_2(x) + \ldots$ of the equation $\varphi(x) = \int_0^1 K(x, y, \varphi(y), \lambda)dy$. A complication occurs only when the number 1 is an eigenvalue of the linear integral operator $A_{10}\varphi(x) = \int_0^1 A_{10}(x, y)\varphi(y)dy$. The corresponding equation for the determination of the functions $\varphi_i(x)$ has the form $\varphi_i(x) = \int_0^1 A_{10}(x, y)\varphi_i(y)dy + \int_0^1 M_i(x, y, \varphi_1(y), \ldots, \varphi_{i-1}(y))dy$. When the condition of orthogonality is satisfied, the ith equation of the just given form has a solution of the form $\varphi_i(x) = \varphi_i^0(x) + c_i p(x)$. In this connection φ_i^0 is a known function and $p(x)$ is the eigenfunction, corresponding to the eigenvalue 1, of the nucleus $A_{10}(x,y)$. The two theorems here given state the following: A formal solution $\varphi(x)$ of the initially written integral equation be possible in the form of the series $\varphi(x) = \lambda\varphi_1(x) + \lambda^2 \varphi_2(x) + \ldots$ and the process of the definition of the functions $\varphi_i(x)$ shall stabilize itself. Then the series uniformly converges with regard to $x \in [0, 1]$, $|\lambda| < \rho$, where ρ is a certain positive number. This series is then the actual solution

Card 2/3

RYBIN, P.F., Cand Phys Math Sci -- (diss) "The disturbed linear integral equation." Irkutsk, 1958, Cover, 4 pp (Kazan' Order of Labor Red Banner State Univ im V.I. Ul'yanov-Lenin)

(KL, 27-58, 102)

RYBIN, P.P.

Formula in the Nekrasov-Nazarov's method. Izv.vys.ucheb. zav.; mat. no.6:131-137 '59. (MIRA 13:3)

1. Irkutskiy gorno-metallurgicheskiy institut.
(Integral equations)

06316
SOV/140-59-6-17/29

16(1)
AUTHOR: Rybin, P.P.

TITLE: On a Formula in the Method of Nekrasov-Nazarov

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959, Nr 6, pp 131-137 (USSR)

ABSTRACT: According to the Academicians A.I.Nekrasov and N.N.Nazarov the solution of the non-linear integral equation

$$u(x)=\int_0^1 A_{01}(x,s)u(s)ds+v\int_0^1 A_{10}(x,s)ds+\int_0^1 \sum_{i+j\geq 2} A_{ij}(x,s)v^i u^j(s)ds \ ,$$

where v is a small parameter, $A_{ij}(x,s)$ are continuous functions, can be obtained by the series arrangement

$$(4) \quad u(x) = \sum_{i\geq 1} v^i u_i(x).$$

But if 1 is an eigenvalue of A_{01}, then the determination of the functions $u_i(x)$ raises difficulties which partially are put

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C6316

On a Formula in the Method of Nekrasov-Nazarov SOV/140-59-6-17/29

aside by V.V.Pokornyy [Ref 3]. Here it is essential to obtain an effective system for the determination of the constants of integration. Such a system was already given by the author [Ref 4]. The present paper contains a general result for this problem.

There are 6 references, 5 of which are Soviet, and 1 German.

ASSOCIATION: Irkutskiy gorno-metallurgicheskiy institut (Irkutsk Mining-Metallurgical Institute)

SUBMITTED: June 13, 1958

Card 2/2

POKORNYY, V.V., RYBIN, P.P.

Stabilizing the process of finding formal implicit functions.
Usp. mat. nauk 15 no.4:169-172 Jl-Ag '60. (MIRA 13:9)
(Functional analysis)

84756

S/042/60/015/004/014/017XX
C111/C222

16.2600

AUTHORS: Pokornyy, V.V., and Rybin, P.P.

TITLE: On the Stabilization of the Process of Finding Formal Implicit Functions

PERIODICAL: Uspekhi matematicheskikh nauk, 1960, Vol.15, No.4, pp.169-172

TEXT: Let the function $\alpha = \alpha(\lambda)$ be defined by the equation

(1) $$F(\alpha, \lambda) = \sum_{k+l\geq 1} T_{kl}\alpha^k\lambda^l = 0.$$

Substituting

(2) $$\alpha = \sum_{k=1}^{\infty} \alpha_k \lambda^{\frac{k}{s}} \quad (s \geq 1)$$

in (1)

$$F(\alpha,\lambda) = \sum_{k+l\geq 1} T_{kl}\left(\sum_{k=1}^{\infty}\alpha_k\lambda^{\frac{k}{s}}\right)^k\lambda^l = \sum_{n=1}^{\infty} P_n(\alpha_1,\ldots,\alpha_n)\lambda^n ,$$

then α_k and s can be determined from the conditions

(3) $$P_n(\alpha_1,\ldots,\alpha_n) = 0.$$

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On the Stabilization of the Process of Finding Formal Implicit Functions

For a successive determination of the coefficients α_k from the system (3) it was observed that, beginning with a certain number n_o, all equations (3) are linear with respect to α_n and at α_n they have the same coefficient different from zero. M.A,Krasnosel'skiy denoted this phenomenon as "stabilization". The authors prove that this phenomenon always appears for the mentioned process, namely at the latest if in the sequence $\{T_{o1}\}$ there appears the first coefficient different from zero.

Let $A_{kl}(x,y)$ be continuous, λ - small parameter.

Theorem 3: For the equation

$$(6) \quad \varphi(x) = \int_0^1 A_{1o}(x,y)\varphi(y)dy + \lambda \int_0^1 A_{o1}(x,y)dy + \int_0^1 \left\{ \sum_{k+l\geq 2} A_{kl}(x,y)\left[\varphi(y)\right]^k \lambda^l \right\} dy$$

the determination of the coefficients $\varphi_k(x)$ of the solution arrangement

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On the Stabilization of the Process of Finding Formal Implicit Functions

(7) $$\varphi(x) = \varphi_1(x)\lambda + \varphi_2(x)\lambda^2 + \dots$$

stabilizes from the system

(8) $$\varphi_k(x) = \int_0^1 A_{1o}(x,y)\,\varphi_k(y)\,dy + B_k(x,\varphi_1,\dots,\varphi_{k-1}) \quad (k=1,2,\dots).$$

The authors mention A.I.Nekrasov and N.N.Nazarov. There are 6 references: 5 Soviet and 1 American.

SUBMITTED: December 8, 1958

Card 3/3

22834
S/199/61/002/001/005/008
B112/B218

16.4500

AUTHOR: Rybin, P. P.

TITLE: Construction of solutions of nonlinear integral equations in the form of a Laurent series

PERIODICAL: Sibirskiy matematicheskiy zhurnal, v. 2, no. 1, 1961, 127-128

TEXT: Integral equations of the form $\varphi(x) = \int_0^1 \sum_{i,j\geq 0} \lambda^j A_{ij}(x,s)\,\varphi^i(s)\,ds$ with $\int_0^1 |A_{ij}(x,s)|\,ds < \infty$ and continuous kernels A_{ij} have small solutions for a small λ, which vanish for $\lambda \longrightarrow 0$, and great solutions which tend to ∞ for $\lambda \longrightarrow 0$. According to V. V. Pokornyy, the small solutions can be expanded in series of the form:

$$\varphi(x,\lambda) = \sum_{k=0}^{\infty} \varphi_k(x)\lambda^{k/s}$$ if the number 1 is not at all, or at least a single eigenvalue of the kernel $A_{10}(x,s)$. Of the great solutions, it is known that in their expansion in a series of λ also a finite number

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Construction of ...

of negative powers may occur, and that therefore the point $\lambda = 0$ may be an algebraic branch point or a pole of finite order. M. A. Krasnosel'skiy has raised the question whether the point $\lambda = 0$ may also be an essentially singular point of the solution. In the present paper, the author proves that this question must be answered in the affirmative. For this proof he uses the following nonlinear integral equation:

$$z(x) = -2\varphi(x)\int_0^1 \varphi(s)\psi(s)z(s)\,ds + \lambda\left[\varphi(x)\int_0^1 \psi(s)z^2(s)ds + \sum_{n=3}^{\infty}\int_0^1 d_n(s)z^n(s)ds\right],$$ where $a_n(s) = b_n(s)/n!\beta_n$,

$$(b_n, \varphi^k) = \begin{cases} 0 & \text{for } k<n \\ 1 & \text{for } k = n \end{cases}$$

$$\beta_n = \begin{cases} 1 & \text{for } \max|b_n(s)| \leq 1 \\ \max|b_n(s)| & \text{for } \max|b_n(s)| > 1 \end{cases}$$

$(\varphi,1) = 0$, $(\psi,\varphi^2) = -1$. This integral equation has a solution: $z(x,\lambda) = [\varphi(x)/\lambda] + c(\lambda)$ with

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Construction of ...

$c(\lambda) = \frac{1}{3!\beta_3\lambda^2} + \frac{1}{4!\beta_4\lambda^3} + \ldots$, for which $\lambda = 0$ is an essentially singular point. There are 2 Soviet-bloc references.

SUBMITTED: February 16, 1960

X

RYBIN, P.P.

Designing solutions of nonlinear integral equations in the form of Loran series. Sib. mat. zhur. 2 no.1:127-128 Ja-F '61. (MIRA 14:6)

(Integral equations)

RYBIN, P.P.; KUZNETSOV, Yu.N.

One nonlinear singular integral equation. Izv. vys. ucheb. zav.; mat. no.3:99-102 '61. (MIRA 14:7)

1. Irkutskiy gornometallurgicheskiy institut.
(Integral equations)

26459
S/140/61/000/003/005/009
C111/C333

16.4500

AUTHORS: Rybin, P. P., Kuznetsov, Yu. N.

TITLE: On a nonlinear singular integral equation

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, no. 3, 1961, 99-102

TEXT: The nonlinear singular equation

$$\varphi(x) = \lambda \int_{-\infty}^{+\infty} K(|x-y|)\, f(y) \sum_{i,j=0}^{\infty} a_{ij} \lambda^i \varphi^j(y)\, dy \qquad (1)$$

is considered, where f(y) is the polynomial

$$f(y) = \sum_{n=0}^{q} b_n y^n \qquad (2)$$

and the series

$$s \equiv \sum a_{ij} \lambda^i \varphi^j \qquad (3)$$

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On a nonlinear singular integral...

converges absolutely for sufficiently small λ and all φ; the a_{ij} are constants. The solution is sought with the set up

$$\varphi(x,\lambda) = \lambda\varphi_1(x) + \lambda^2\varphi_2(x) + \ldots \qquad (4)$$

For determining the φ_i one obtains the system

$$\varphi_1(x) = \int_{-\infty}^{+\infty} K(|x-y|)\, f(y)\, a_{oo}\, dy$$

$$\varphi_2(x) = \int_{-\infty}^{+\infty} K(|x-y|)\, f(y)\, \psi_1(y)\, dy \qquad (6)$$

$$\psi_3(x) = \int_{-\infty}^{+\infty} K(|x-y|)\, f(y)\, \psi_2(y)\, dy$$

On a nonlinear singular integral ...

etc. where the Ψ_i are formed from the a_{ij} and the $\varphi_1, \ldots, \varphi_i$ by addition and multiplication. Since Ψ_n depends only on $\varphi_1, \ldots, \varphi_n$, one can successively determine the φ_i from (6).

Let denote

$$K_n = 2 \int_0^\infty K(\xi)\, \xi^n d\xi\,, \quad K_{2m+1} = 0 \qquad (n=2m)\,. \qquad (7)$$

The series

$$K + \delta^2 K_2 + \delta^4 K_4 + \ldots\,, \qquad (12)$$

is assumed to converge for $|\delta| < \delta_0$.

Theorem: If in the equation (1) the kernel $K(|x-y|)$ is so that the series (12) converges, then (1) possesses a solution in the form of the series (4), where this series converges for sufficiently small λ and arbitrary x.

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On a nonlinear singular integral ... C111/C333

There are 5 Soviet-bloc-references.

ASSOCIATION: Irkutskiy gornometallurgicheskiy institut (Irkutsk Mining and Metallurgical Institute)

SUBMITTED: February 10, 1959

Card 4/4

ALFEROV, N. S.; RYBIN, R. A.

"Experimental Heat Transfer Investigation for Annular Channels."

paper presented at 2nd All-Union Conf on Heat and Mass Transfer, Minsk, 4-12 May 1964.

"Polzunov" Inst, Leningrad.

ACCESSION NR: AP4033623 S/0032/64/030/004/0503/0503

AUTHORS: Tisheninov, A. Ye., Ryabin, R. A.

TITLE: A photoelectric relay for recording the crisis of bubble boiling

SOURCE: Zavodskaya laboratoriya, v. 30, no. 4, 1964, 503

TOPIC TAGS: photoelectric relay, bubble boiling, film boiling, superheating, ohmic resistance, photoresistance, photosensitive element FS K1, polarizing relay RPB 5, relay MKU 48, cadmium sulfide, relay MKU 48

ABSTRACT: A photoelectric relay (see Fig. 1 on the Enclosure) was built for recording the approach of crisis during the transition from bubble boiling to film boiling. It was to be used for disconnecting the power circuit when superheating was detected. The operation of the relay is based on the change in ohmic resistance of the circuit as a result of illuminating the photoresistor. Cadmium sulfide material of the type FS-K1 (with a sensitivity of 6000 microamp/lumen and a relative change in resistance of 99.28% from dark to bright) was used for the construction of the photosensitive element. Terminal blocks of relay MKU-48 were used for all connections. A polarizing relay of the type RPB-5 was provided to enhance the sensitivity of the photorelay. Orig. art. has: 1 figure.

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ACCESSION NR: AP4033623

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy kotloturbinnyy institut im. I. I. Polzunova (Central Scientific Research, Design, and Construction Institute of Boilers and Turbines)

SUBMITTED: 00 DATE ACQ: 28Apr64 ENCL: 01

SUB CODE: EC, GC NO REF SOV: 000 OTHER: 000

Card 2/3

L 42318-66 EWT(1) WW/GD

ACC NR: AT6021836 (A) SOURCE CODE: UR/0000/65/000/000/0060/0078

48
B7+1

AUTHOR: Alferov, N. S.; Rybin, R. A.

ORG: Central Boiler and Turbine Institute im. I. I. Polzunov (Tsentral'nyy kotloturbinnyy institut)

TITLE: Heat transfer in annular channels

SOURCE: Teplo- i massoperenos. t. III: Teplo- i massoperenos pri fazovykh prevrashcheniyakh (Heat and mass transfer. v. 3: Heat and mass transfer in phase transformations). Minsk, Nauka i tekhnika, 1965, 60-78

TOPIC TAGS: convective heat transfer, heat transfer coefficient

ABSTRACT: The experiments were carried out in concentric annular channels with a gap width of 0.001, 0.0015, 0.003, and 0.005 meters. The internal diameter of the channel was 0.015 meters. The tests were made in a closed loop with forced circulation of water at a pressure of 147 bars. The circulation rate was varied from 0.4 to 8 meters/sec, the preheating temperature from 6 to 70°K, and the heat loads from 23.3×10^4 to 17.45×10^5 watts/m^2. The experimental results are given in tabular and graphic form. The following conclusions are drawn. In

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ACC NR: AT6021836 O

the turbulent flow of water in annular channels with heating from one side, convective heat transfer from the internal surface depends on the width of the gap (a calculation formula is proposed). Heat transfer from the outer surface does not depend on the width of the gap. In the surface flow of a liquid with forced motion in annular channels at high values of water underheating, with heating from one and two sides, the heating does not depend on the width of the gap. A second formula is proposed for calculating the heat transfer coefficient under these conditions. Orig. art. has: 12 formulas, 5 figures and 3 tables.

SUB CODE: 20,13/SUBM DATE: 09Dec65/ ORIG REF: 015/ OTH REF: 013

Card 2/2

L 41752-66 EWT(1) IJP(c) GG/AT

ACC NR: AP6011910 SOURCE CODE: UR/0141/66/009/002/0261/0271

62
61
B

AUTHOR: Kondratenko, A. N.; Liokumovich, V. I.; Rybin, P. N.

ORG: none

TITLE: Nonlinear theory of electromagnetic waves in a confined plasma

SOURCE: IVUZ. Radiofizika, v. 9, no. 2, 1966, 261-271

TOPIC TAGS: isotropic plasma, plasma electromagnetic wave, NONLINEAR THEORY, CONFINED PLASMA

ABSTRACT: The propagation of electromagnetic waves with small finite amplitude in a homogeneous plasma layer of any thickness is theoretically considered. The E-mode (E_x, E_z, H_y) is determined; a slight nonlinearity is assumed. The initial hydrodynamic system of nonlinear partial differential equations consists of three Maxwell equations and one equation describing the motion of plasma electrons. Solution of this system is sought in the form of a small-parameter

Card 1/2 UDC: 621.371.182

L 41752-66

ACC NR: AP6011910

series; in each approximation, the partial differential equations are reduced to ordinary linear differential equations with known right members and boundary conditions. First, a simpler case — the plasma layer placed in an infinitely strong magnetic field — is analyzed. Then, the case of free plasma layer is considered, a linear solution is found, and second harmonics of the wave are determined. Near-critical-frequency nonlinear dispersion equations are set up. It is found that the phase velocity essentially depends on the wave-field amplitude in a semi-limited plasma, near the critical frequency. "The authors wish to thank Ya. B. Faynberg for discussing the results." Orig. art. has: 102 formulas.

SUB CODE: 20 / SUBM DATE: 22Jul65 / ORIG REF: 006 / OTH REF: 003

Card 2/2

RYBIN, P.P.

New types of freight cars. Zhel.-dor.transp. 45 no.12:85-86 D '63.
(MIRA 17:2)

1. Glavnyy inzh. Dneprodzerzhinskogo vagonostroitel'nogo zavoda.

ROMANOV, A.N., kand.tekhn.nauk; RYBIN, N.S., starshiy nauchnyy sotrudnik; IVANOVA, G.A., starshiy nauchnyy sotrudnik; PETKEVICH, V.P., starshiy nauchnyy sotrudnik

Standard processing procedure for manufacturing food concentrates. (MIRA 14:8)
Trudy VNIIKOP no.10:42-48 '59.
(Food, Concentrated)

RUDZITSKIY, A.A.; RYBIN, N.S.; KRETININ, A.A.; CHERNOMORSKIY, G.A., spetsred.

[Automatic control of the process of drying on conveyer driers] Avtomatizatsiia protsessa sushki na konveiernykh sushilkakh. Moskva, Gos.nauchno-issl.in-t nauchn. i tekhn.informatsii, 1959. 9 p. (MIRA 13:6)

(Drying apparatus)

VYSOKOVSKIY, S.N.; RANEYEV, G.G.; MERKULOVA, R.M.; RYBIN, O.N.; LOGVINOV, L.M.; SHTIRTS, V.V.; POTAPOV, V.P.

Efficient rolling conditions and the introduction of strain gauges for controlling metal pressure on rolls. Biul. tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. 17 no.12:7-9 D '64. (MIRA 18:3)

RYBIN, S.F., otv. red.; STOROZHEV, N.A., red.; KARASOV, A.G., red.; KYCHANOVA, N.I., red.; POPOV, Yu.K., red.; KOVRIGO, V.P., red.; YERMOLAYEVA, N.G., red.

[The Udmurt land; collection of articles, stories, and verses about nature in the Udmurt A.S.S.R.] Krai Udmurtskii; sbornik statei, rasskazov, stikhov o prirode Udmurtii, Izhevsk, Udmurtskoe knizhnoe izd-vo, 1963. 75 p. (MIRA 18:2)

1. Vserossiyskoye obshchestvo sodeystviya okhrane prirody. Udmurtskoye otdeleniye.

RYBIN, S.N.

Some epidemiological terms. Zhur. mikrobiol., epid. i immun. 40 no.9:143 S'63. (MIRA 17:5)

1. Iz Oshskoy sanitarno-epidemiologicheskoy stantsii.

L 06139-67 EWT(m) IJP(c)
ACC NR: AP6031170 SOURCE CODE: UR/0361/66/000/002/0003/0015

AUTHOR: Nemenov, L. M.; Anisimov, O. K.; Arzumanov, A. A.; Golovanov, U. N.; Yezerskiy, V. F.; Kravchenko, Ye. T.; Kruglov, V. G.; Laktionov, I. A.; Meshcherov, R. A.; Meshcherova, I. V.; Popov, Yu. S.; Prokof'yev, S. I.; Rybin, S. N.; Fedorov, N. D.

ORG: Institute of Nuclear Physics, AN KazSSR (Institut yadernoy fiziki AN KazSSR)

TITLE: Putting the Kazakhstan cyclotron into operation

SOURCE: AN KazSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 2, 1966, 3-15

TOPIC TAGS: cyclotron, proton accelerator, Mev accelerator, alpha particle / U1502 cyclotron

ABSTRACT: The U-150-2 cyclotron of the Institute of Nuclear Physics of the Academy of Sciences of the Kazak SSR is described. This cyclotron is designed to accelerate protons, deuterons, alpha particles, and multiply charged ions. Energies of 24 Mev are obtained with deuterons. Alpha particles and protons can be accelerated to 48 Mev and 20 Mev, respectively. Sixfold ionized carbon can be accelerated to 140 Mev. The magnetic field in the cyclotron necessary for 20 Mev deuteron production is 14000 oersteds; this is produced by a current of 800 amp. The necessary variation of the magnetic field with radius is obtained by the use of annular shims. The high frequency generator and its alignment is described. The dependence of beam current at various

Card 1/2

L 06139-67
ACC NR: AP6031170

final radii is plotted as a function of the potential between the "dees". The authors thank engineers V. A. Borisov, B. L. Vaysman, N. G. Gladenko, senior electronic engineer D. D. Gromov, chiefs of work shifts G. A. Obraztsov and V. E. Oshkin, and chief of service A. I. Tkachev for participation in the work of setting aright the various difficulties involved in setting up the cyclotron. Orig. art. has: 11 figures.

SUB CODE: 18/ 20/ SUBM DATE: none

Card 2/2 mfe

RYBIN, V.I., kand.

Operational and production planning based on the mechanization of calculations. Mashinostroenie no.4:89-93 Jl-Ag '64. (MIRA 17:10)

RYBALTOVSKIY, O.V.

Pharmacodynamics of pumpkin seeds. Trudy Gel'm. lab. 9:232-233 '59.
(MIRA 13:3)
(Pumpkin seed) (Anthelmintics)

9(6), 9(8)

Z/014/60/000/05/010/043
D029/D025

AUTHOR: Ohera, Milan, Engineer; Rybářík, Antonín

TITLE: Apparatus for Registration of Frequency Deviations

PERIODICAL: Sdělovací technika, 1960, Nr 5, pp 175-177

ABSTRACT: The authors state that parameters of carrier frequencies of transmitted signals must be very precisely maintained and must therefore be exactly controlled. This is especially necessary in tuned circuits where LC oscillators are used, the stability of which is affected by temperature changes. The exciter Test Shop of the Tesla Electronic Equipment Plant in Hloubětín developed an apparatus which registers automatically frequency deviations of exciters caused by temperature changes. The block schematic of the apparatus is given in Diagram 1. A crystal oscillator which can be switched over to various frequen-

Card 1/5

Apparatus for Registration of Frequency Deviations

cies serves as control unit. The crystals themselves are placed in a thermostat to reduce the influence of outside temperature /Diagram 27. The signal of the crystal oscillator is fed to a mixer, the second input of which is connected to the voltage of the exciter to be measured /Diagram 37. The voltage of different frequencies is then fed from the output of the mixer to an amplifier which has the same effect as an amplitude limiter. The resulting voltage has a rectangular course with a sufficiently steep front edge so that its positive peaks can trigger a monostable multivibrator upon passing a derivative circuit. The oscillations of the multivibrator correspond then with the beat frequency of the compared signals. The rectangular course of the voltage from the multivibrator steers

Card 2/5

Apparatus for Registration of Frequency Deviations

the current flow of the output stage, the anode circuit of which is equipped with the registration device. The length of the rectangles is constant, only their frequency changes, and the medium value of the output stage current (and the value indicated by the Depréz registration device) are in linear dependance of the difference of both frequencies. The curve of emitter stability is recorded on a paper tape. The apparatus has also a time switch, which changes every half hour, for a period of 3 minutes, to another power source for measuring the temperature. The temperature is measured with a thermistor, connected into an a-c fed bridge /Diagram 4/. The a-c signal of the bridge is amplified, rectified and led to the registration device. The resulting chart is shown

Apparatus for Registration of Frequency Deviations

in Photo 7. The apparatus is equipped with 2 "Metra RG" registration devices and all other circuits, except the thermometer, are doubled, so that 2 independent measurings can be made. The switch-over of the registration device for temperature measuring is blocked to avoid errors when both instruments are simultaneously connected /Diagram 57. The entire apparatus is fed with electronically stabilized d-c from the 220 V grid, has 2 crystal oscillators with 6 measuring ranges from 1 - 2 Mc, achieves a frequency stability of 2×10^{-7}/°C/24 hours, has 2 mixers with an input voltage of 1 V and a frequency range of 100 Kc - 10 Mc and 2 frequency meters adjustable to 5 ranges:

Card 4/5

Z/014/60/000/05/010/043
D029/D025

Apparatus for Registration of Frequency Deviations

60-120-600-1,200-6,000 c/s. Besides measuring oscillator stability, the apparatus can be also used for determining the heat coefficient of condensers, the inductive coefficient also for crystal cuts. With minor modifications, it can be used to measure the stability of revolutions and other periodic processes. The apparatus is designed in sections which are inserted between partition walls. The front panel of the apparatus is shown in Photo 6. There are 6 diagrams and 1 photo.

Card 5/5

RYBIN, P.I.

BELYAVSKIY, G.N.; RYBIN, P.I.; SEREBRENNIKOV, S.S., redaktor; BEKKER, O.G., tekhnicheskiy redaktor

[Lining steel smelting furnaces] Kladka staleplavil'nykh pechei. Izd. 2-e, ispr. i dop. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1953. 322 p. (MLRA 7:10)
(Smelting furnaces)

15-57-10-15004

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10, p 282 (USSR)

AUTHOR: Rybin, P. I.

TITLE: An Experiment in Automation of the Electro-Mechanical Equipment in Mine No. 7/8 of the Chistyakovo Anthracite Trust (Opyt avtomatizatsii elektromekhanicheskikh ustanovok shakhtoupravleniya Nr 7/8 tresta Chistyakovantratsit)

PERIODICAL: V sb: **Avtomatizatsiya** v ugol'n. prom-sti, Moscow, Ugletekhizdat, 1956, pp 16-24

ABSTRACT: A brief description is given of the equipment and operation of three automatic installations in mine No. 7-"bis" (Donbass): the principal hoist, which is inclined and uses an OL-9-12 winch; the central high-voltage water-drainage apparatus according to the Donets Industrial Institute design using pump KSM-100 x 50; and the simple winch for the rock dump. Along the principal incline (1.5 km long) with nine platforms

Card 1/3

An Experiment in Automation of the Electro-Mechanical (Cont.)

for hoisting the loads, signals are made in the dispatch room by light screens with signal lamps for each platform. The signals are interlocked with the automatic AUL-2 design. With this system, in case the hoist stops at any of the platforms the dispatcher discovers about the stoppage and takes the proper measures. The remote control of the hoist is accomplished from the platforms without an operator at the winch. Automation of the central water-drainage Donets Industrial Institute system requires the pump to be constantly submerged, but the methods of submerging it are unreliable and this weakness complicates considerably the conversion to an automatic system and makes the process more expensive. A new simple and reliable method for submerging the pump is proposed. In this scheme the water being supplied from overlying layers constantly flows over the intake pipe of the pump. Such an arrangement may be found in uninterrupted operation for many years. The mounting and operation of remote control for the simple winch operating the rock dump are described. An operator at the place of loading the cars generally uses a switch to give an impulse in the remote control circuit, at 36 v, for starting the winch "forward" or "backward." An arrangement

An Experiment in Automation of the Electro-Mechanical (Cont.)

is provided in the system for producing a smooth increase in speed of the cars at the beginning of the course and a smooth retardation till they are completely stopped and automatically unloaded at the dump on the surface. Also provided are an automatic emergency brake to work when the cable breaks, when the car begins to bury itself, and when the load is excessive; safety guards are also present at top and bottom. The system is made of standard apparatus and of apparatus prepared in the mine shops. The introduction of these three automatic installations in the mine has effected an economy of 116 209 rubles by freeing 11 men formerly operating the equipment.

Card 3/3

R. I. Teder

SOV/112-58-2-2306

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1958, Nr 2, pp 83-84 (USSR)

AUTHOR: Rybin, P. I.

TITLE: Automatic Operating Experience with Electromechanical Installations at Mine Management Nr 7/8, "Chistyakovantratsit" Trust (Opyt avtomatizatsii elektromekhanicheskikh ustanovok shakhtoupravleniya Nr 7/8 tresta "Chistyakovantratsit")

PERIODICAL: V sb.: Avtomatizatsiya v ugol'n. prom-sti, M., Ugletekhizdat, 1956, pp 16-24

ABSTRACT: The main hoisting installation, with an OL-9-12 winch, at the Nr 7-bis shaft, "Chistyakovantratsit" Trust, has been converted to automatic control. Automation has reduced the starting time of the main hoist after a shutdown, ensured smoother starting, and reduced the number of workers. The automatic control equipment for a central high-voltage water-pumping installation that has a DEE scheme and a KSM - 100 x 150 pump is mounted at the 5th level.

Card 1/2

Automatic Operating Experience with Electromechanical Installations at Mine . . . .

Acceleration and deceleration of the barren rock-transportation winch has been made automatic. Automating the plant has made 4 winch-operators unnecessary and has improved winch operating conditions. Automation of all of the above-listed outfits saved 116,209 rubles per year on wages and quickly paid for all automation expenses.

V.F.R.

RYBIN, R.; NOVAK, V.

Phenolic substances in coffee substitutes and their determination. p. 424.

CESKOSLOVENSKA HYGIENA. Praha, Czechoslovakia. Vol. 4, no. 7, Aug. 1959.

Monthly list of East European Accessions (EEAI) LC, Vol. 9, no. 1, January 1960.

Uncl.

H

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Applications. Fats and Oils. Waxes. Soaps and Detergents. Flotation Agents.

Abs Jour : Ref Zhur-Khimiya, No 6, 1959, 21128

Author : Sedlacek, A. J.; Rybin, R.
Inst : -
Title : Comparison of a Thiocyanate Colorimetric Method with Two Iodometric Methods for Determining the Peroxide Count of Fats.

Orig Pub : Prumysl potravin, 1957, 8, No 5, 258-260

Abstract : It is indicated that the colorimetric method of determining the peroxide count in fats according to Hills and Teal (J. Dairy Res., 1946, 14, 340) gives erroneous re-

Card : 1/2

RUDOLF, RYBIN

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application. Food Industry. H-28

Abs Jour: Referat Zhur-Khimiya, No 5, 1958, 16119.

Author : Sedlacek Bohuslav, Rybin Rudolf
Inst :
Title : Vitaminization of Dry Milk with L-Ascorbic Acid.

Orig Pub: Vyziva lidu, 1956, 11, No 11, 156-158.

Abstract: 200-250 mg l-ascorbic acid (I) and 100 mg Na-citrate are added per liter of milk which is then spray-dried and packed in cardboard boxes. During drying about 10% of the added I are destroyed. On prolonged storage of the vitaminized dry milk no change in milk fats and no taste deterioration take place due to the antioxidant properties of I. The reconstituted milk is recommended for infant feeding.

Card : 1/1

Author : -
Inst :
Title : Determination of Oxi[illegible] by the Colorimetric Method Using

Pub : Prumysl potravin, 1957, 8, No 1, 44-45

Abstract : A colorimetric method is proposed, in which 2-thiobarbituric acid is utilized, for the evaluation of the degree of freshness of fats. 5 g of fat are weighed out to an accuracy within 0.01 g and placed in a 500 ml flask into which are added 100 ml water and 5 ml 3N HCl. The flask is attached, by means of a ground glass joint, to a Liebig condenser and distillation is carried out. For the analysis are taken the first 25 ml of the distillate, which

Card 1/2

[illegible] into a 20 x [illegible], solution A and solu- [illegible] mixture is stirred thoroughly and [illegible] 30 minutes on a boiling water bath. After cooling in cold water, the intensity of the pink-red coloration that develops, is determined colorimetrically at λ 530 mμ (green filter). At the same time a blank test is made. The standard used is a solution of Safranin O in water. Solution A is prepared as follows: 1 g of 2--thiobarbituric acid is dissolved with heating in 50 ml distilled water, with an addition of 2 ml of 3N NaOH. After cooling, 0.4 ml of 3N HCl are added, and the solution is diluted with water to a volume of 100 ml. Solution B is concentrated (85%) phosphoric acid.

Card 2/2

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application. Fats and Oils. Waxes. Soaps and Detergents. Flotation Agents. H-25

Abs Jour: Ref Zhur-Khim., No 2, 1959, 6159.

Author : Sedlacek, B; Rybin, R; Ticha, A.
Inst :
Title : Determination of Peroxide Numbers and Other Methods of Estimation of Degree of Rancidity of Fats.

Orig Pub: Zh. gigiyeny, epidemiol., mikrobiol. i immunol. (Chekhosl.), 1957, 1, No 1, 88-90.

Abstract: Comparative studies of alterations in fats during their storage by various chemical methods and organoleptic estimations were carried out. The following was tested: modified method of determination of peroxide numbers (PNs),

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CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application. Fats and Oils. Waxes. Soaps and Detergents. Flotation Agents. E-25

Abs Jour: Ref Zhur-Khim., No 2, 1959, 6159.

determination of acidity, colorimetric methods (with thiobarbituric acid and with diphenylcarbazide), and tests of Kreis, Fellenberg, Schmalfuss and Keren /transliteration from Russian/ (with reduction with phenolphthalein). It was found that PNs can be used for the estimation of the rancidity of lard (L), as well as of vegetable oils, but that they are not applicable to the estimation of the freshness of cow butter. The PN of fresh lard should be equal to, or less than, 1 m-equ per kg; lard with PN equal to, or less than, 2.5 can be stored, if the taste quality was normal, and lard with PN greater than 7 is not fit for consumption. The PNs of rancid vegetable oils are greater than 25 with the

Card : 2/3

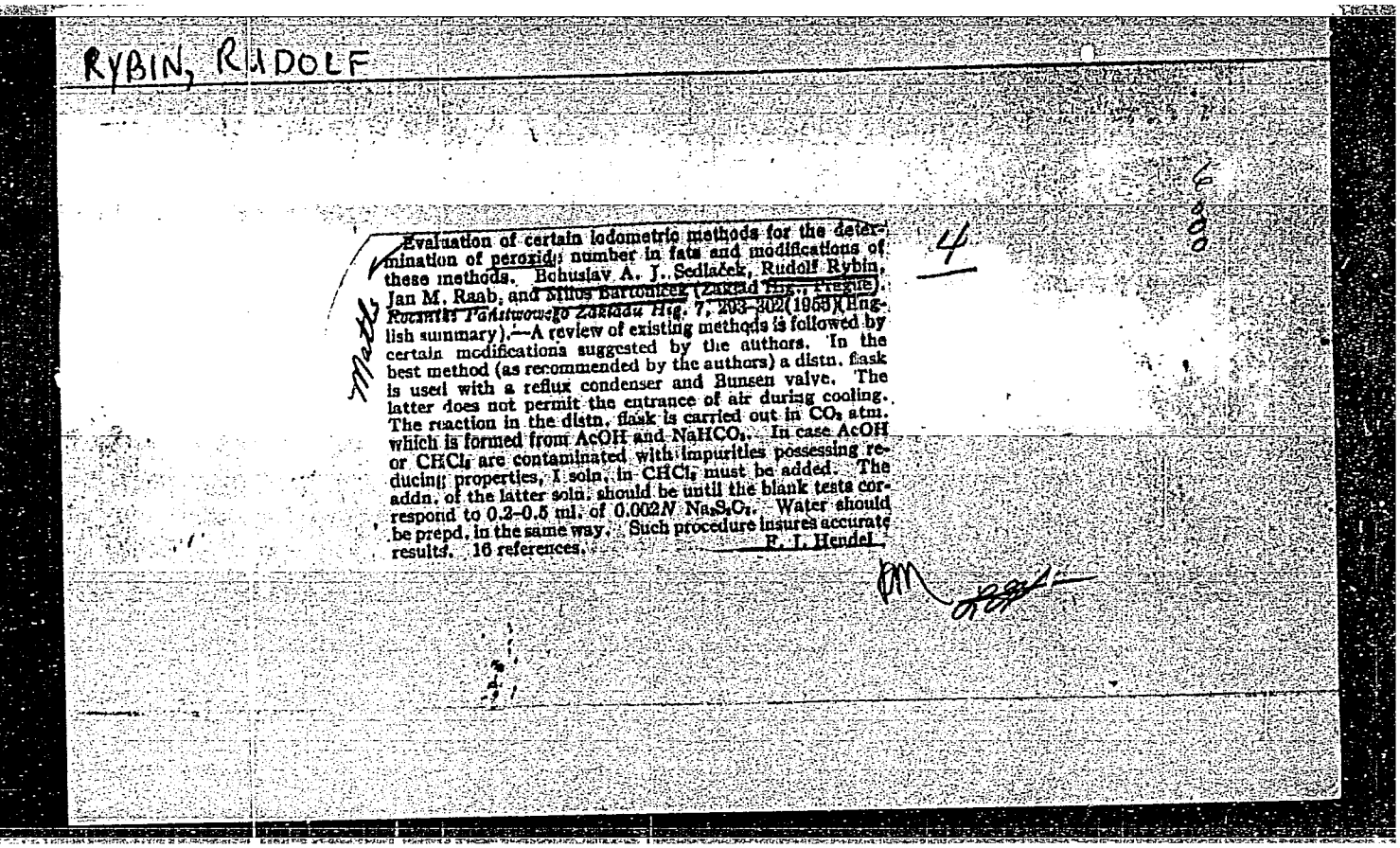
Abs Jour: Ref Zhur-Khim., No 2, 1959, 6159.

exception of the deodorized peanut butter, which is rancid at PN = 15, soybean oil, which is rancid at PN = 10, and cottonseed oil, which is rancid at PN = 5. Acidity not always characterizes the degree of rancidity of fats, it is most applicable to the analysis of cow butter. Kreis's test is important only, if the result is positive. Schmalfuss's test is useful for the establishing of a strong rancidity, and Koren's /transliteration from Russian/ test is not very reliable. Colorimetric methods yielded good results. - A. Yemel'yanov.

RYBIN, R.

Comparison of the colorimetric rhodanide method with two iodometric methods to determine peroxide numbers in fats. p.258.
(Prumysl Potravin, Vol. 8, No. 5, 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.



RYBIN, RUDOLF

Evaluation of certain iodometric methods for the determination of peroxide number in fats and modifications of these methods. Bohuslav A. J. Sedlaček, Rudolf Rybin, Jan M. Raab, and Milos Bartoníček (Zakład Hig., Prague). *Roczniki Państwowego Zakładu Hig.* 7, 293–302(1955)(Eng. lish summary).—A review of existing methods is followed by certain modifications suggested by the authors. In the best method (as recommended by the authors) a distn. flask is used with a reflux condenser and Bunsen valve. The latter does not permit the entrance of air during cooling. The reaction in the distn. flask is carried out in CO_2 atm. which is formed from AcOH and $NaHCO_3$. In case AcOH or $CHCl_3$ are contaminated with impurities possessing reducing properties, I soln. in $CHCl_3$ must be added. The addn. of the latter soln. should be until the blank tests correspond to 0.2–0.5 ml. of 0.002*N* $Na_2S_2O_3$. Water should be prepd. in the same way. Such procedure insures accurate results. 16 references.

F. I. Hendel

TISHENKO, A.V., KLEIN, R.A.

Thermoelectric relay for fixing the critical points of transition from bubble to film boiling. Zav.lab. 30 no.4:503 '64. (MIRA 17:4)

1. Tsentral'nyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy kotloturbinnyy institut imeni I.I.Polzunova.

45116

S/170/63/006/002/003/018
B104/B186

26.5400

AUTHOR: Rybin, R. A.

TITLE: Investigation of how the tube diameter affects the amount of the critical thermal load during the boiling of water

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 2, 1963, 15-19

TEXT: This investigation relates to the flow of a water-vapor mixture with a water-vapor content of up to 10% by weight at the channel outlet, a weight velocity, $\rho w_o = (1.6\text{-}7.0)\cdot 10^4$ n·m^{-2}·sec^{-1} and a pressure of $101.3\cdot 10^5$ n·m^{-2}. The tubes had relative lengths of $l/d = 40$ and the experimental setup was a closed loop with forced water circulation. Results: The critical thermal load increases with decreasing tube diameter. $q_{cr} = (6.0\text{-}3.05\beta)d^{0.4}10^5$, d being the tube diameter and β the vapor content per unit volume. Further processing of the experimental results according to S. S. Kutateladze (Nauchnyye doklady vysshey shkoly, Energetika, no. 2, 1959) confirms this result. Explanation: With

Card 1/2

Investigation of how the tube diameter, ...

reduction of the channel diameter, the characteristic dimension of the developing vapor phase decreases under the effect of the hydraulic pressure of the flowing liquid. The share of the tube's heating surface in contact with the vapor phase is reduced and the stability of the diphase layer close to the wall is increased. There are 4 figures.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut imeni I. I. Polzunova, g. Leningrad
(Central Boiler and Turbine Institute imeni I. I. Polzunov, Leningrad)

SUBMITTED: July 12, 1962

Card 2/2

4400

S/089/62/013/004/008/011
B102/B108

26.5400

AUTHOR: Rybin, R. A.

TITLE: Critical thermal loads in a saturated liquid boiling in tubes

PERIODICAL: Atomnaya energiya, v. 13, no. 4, 1962, 377 - 380

TEXT: A comparison between experimental and theoretical data on the nature of the boiling crisis indicates that the former can be sufficiently generalized, within the limits of error, by taking only hydrodynamic factors into account. Such a method of generalization is discussed here. The criterion for a generalization of the critical thermal loads which correspond to the boiling of non-viscous liquids is $K = q_{cr}/r\sqrt{g\gamma''}\sqrt[4]{\sigma(\gamma' - \gamma'')} = \text{const}$, where q_{cr} is the critical flow of heat. As the relation $Ar = \gamma^2\sigma^{3/2}/\rho\mu^2\sqrt{(\gamma' - \gamma'')}$ is assumed to be valid in second approximation, the following system of fundamental criteria is obtained:

$$K = f\left(W_0\sqrt[4]{\frac{\gamma'-\gamma''}{g^2\sigma}};\ \frac{\Delta l}{r};\ \frac{\gamma''}{\gamma'};\ \frac{\gamma'\sigma^{3/2}}{g\mu^2(\gamma'-\gamma'')^{1/2}};\ d\sqrt{\frac{\gamma'-\gamma''}{\sigma}}\right), \qquad (1).$$

$$W_0\sqrt[4]{\frac{\gamma'-\gamma''}{g^2\sigma}} = K_W;$$

$$d\sqrt{\frac{\gamma'-\gamma''}{\sigma}} = K_d.$$

Card 1/2

Critical thermal loads ...

(cf. S. S. Kutateladze, M. A. Styrikovich. Gidravlika gazozhidkostnykh sistem - Hydraulics of gas-liquid systems - M., Gosenergoizdat, 1959). If $x = \Delta i/r$ i the vapor content by weight, K can be put equal to $f(w_0 \sqrt[4]{(\gamma' - \gamma'')/\varepsilon^2\sigma}; \beta)$ (2) after having introduced $\beta = \left[1+\gamma''(1-x)/\gamma'x\right]^{-1}$. These relations hold for pressures of 100 - 200 at in water -steam mixtures and for tube diameters of d = 6 - 10 mm, in which case q_{cr} is independent of d. Differences between experimental data obtained under equal conditions are attributed to the occurrence of pulsations in steam-generating circuits. How the length of tube within which there is surface boiling influences the flow in the length of tube in which the crisis sets in is discussed in detail. The effect of an inaccurate determination of the vapor content, and the effect of the transition from bubble boiling to film boiling, are also discussed. [Abstracter's note: Most of the quantities used here are not defined, and obviously are taken from Soviet books. The 18 references are all Soviet.]

SUBMITTED: April 29, 1961

Card 2/2

RYBIN, S. A.

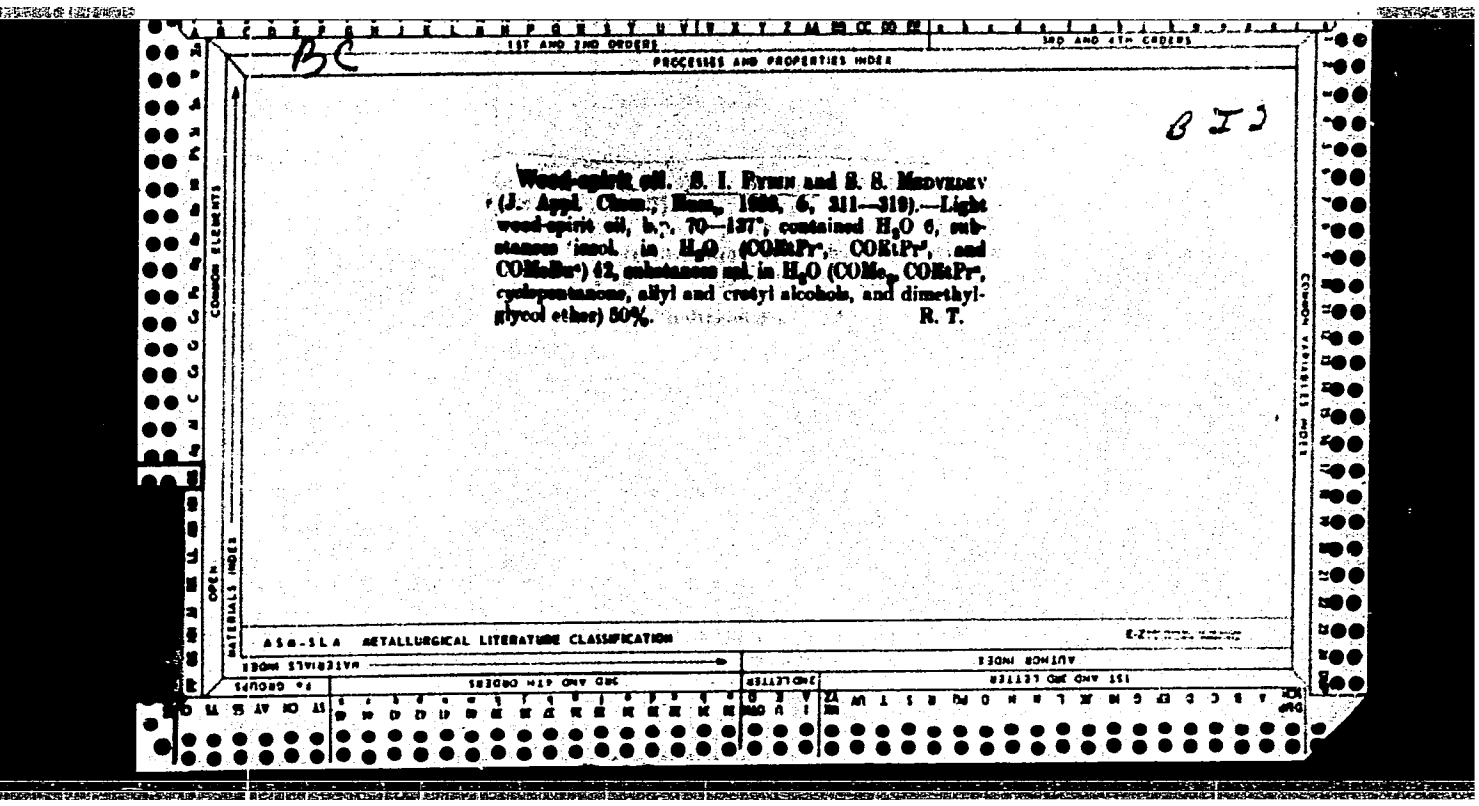
Severnyi morskoi put' i ego znachenie v ekonomike Sibiri. /Northern Sea Route and its importance for the economics of Siberia/. (In Sibiriskii kraevoi nauchno-issledovatel'skii s"ezd, 1st, Novosibirsk, 1926, Trudy, v. 4, 1928, p. 76-99). DLC: HC481.S6 1926

SO: SOVIET TRANSPORTATION AND COMMUNICATIONS, A BIBLIOGRAPHY, Library of Congress, Reference Department, Washington, 1952, Unclassified.

RYBIN, S.F., red.

[Conservation, a national problem] Okhrana prirody - vsenarodnoe delo. Izhevsk, Udmurtskoe knizhnoe izd-vo, 1962. 55 p. (MIRA 17:4)

1. Vserossiskoye obshchestvo okhrany prirody. Udmurtskoye respublikanskoye otdeleniye.



Wood-spirit oil. S. I. Fynn and S. S. Medvedev (J. Appl. Chem., Russ., 1936, 6, 311—319).—Light wood-spirit oil, b.p. 70—137°, contained H_2O 6, substances insol. in H_2O ($COEtPr^n$, $COEtPr^i$, and $COMeBu^n$) 42, substances sol. in H_2O ($COMe_2$, $COEtPr^n$, cyclopentanone, allyl and crotyl alcohols, and dimethylglycol ether) 50%. R. T.

[redacted]

New species of the genus Haemogamasus (Gamasoidea, Haemogamasidae). Zool. zhur. 43 no.12:1869-1872 '64
(MIRA 18:2)

1. Orlovskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya.

ARZUMANOV, A.A.; MESHCHEROV, R.A.; MIRONOV, Ye.S.; NEMENOV, L.M.; RYBIN, S.N.; KHOLMOVSKIY, Yu.A.

Experiments on the acceleration and yield of ions in a cyclotron with azimuthal variation of the magnetic field and controllable energy. Atom. energ. 12 no.1:12-21 Ja '62. (MIRA 15:1)
(Cyclotron) (Ions)

ARZUMANOV, A.A.; MESHCHEROV, R.A.; MIRONOV, Ye.S.; NEMENOV, L.M.; RYBIN, S.N.
KHOLMOVSKIY, Yu.A.

Beam exit and energy regulation in a cyclotron with azimuthal magnetic field variation. Atom.energ. 10 no.5:501-502 My '61. (MIRA 14:5)

(Cyclotron)

RYBIN, S.N.

New species of flea, Nycteridopsylla oligochaeta sp. nov., a parasite of the Asiatic long-eared bat of Barbastella darjelingensis Dobs. Trudy Nauch.-issl. protivochum. inst. Kav. i Zakav. no.5:206-210 '61. (MIRA 17:1)

1. Oshskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya.

87373
S/120/60/000/00 /012/028
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AUTHORS: Kondrashev, L.F., Rybin, S.N., Sokolov, N.I. and Khaldin, N.N.

TITLE: Thin Vacuum-Tight Windows

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No.4, pp.102-105

TEXT: In nuclear reaction studies it is frequently necessary to have thin vacuum-tight windows. The present paper describes some of the designs of such windows which were used in experiments on a 1.5 m cyclotron in which these windows were used for gas targets, vacuum chambers and other devices. The simplest solution of this problem which ensures that the thin window is in a vacuum-tight contact with the body of the apparatus is to solder the window to the body or to attach it with a suitable adhesive. However, this leads to a certain amount of contamination of the evacuated region during the soldering process and the contamination is difficult to remove. In the case of soldering, a further difficulty is encountered since it is difficult to attach the window uniformly over the perimeter. As a result, the thin window is nonuniformly loaded when the apparatus is evacuated. The heating of the material of the window during soldering may lead to nonuniform

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changes in its mechanical properties which are also undesirable, and non-demountable designs present difficulties when it is desired to replace the windows. Fig.1 (1 - window, 3 - thin foil, 4,5 - rubber packing) shows a demountable form of a window in which the thin foil has a cylindrical form and vacuum tightness is ensured by rubber packing. With a gas target of 5 cm in diameter, window height of 1.2 cm and window length along the circular periphery of 9 cm, an 8 μ thick iron foil withstood pressures in excess of 2.5 atm. With a gas target 10.6 cm in diameter and two windows of 1.7 cm x 5 cm and three windows 2 to 3 cm in diameter, a 30 μ copper foil withstood pressures up to 1.5 to 2 atm. This type of window was used by Bogdanov et al (Ref.1) in their studies of the proton spectra of the reaction $He^4 + d$ at 30°.
Fig.2 (1 - mica plate 10 μ thick, 4 - rubber packing) shows another type of target in which the window is plain and consists of a 10 μ thick mica plate maintained in position by brass grids on either side. The transparency of this arrangement was about 65%. The window is made vacuum-tight by rubber packing. A plane window

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designed for working pressures up to 10 atm is shown in Fig.3. Here again, the foil 3 forming the wall of the window is supported on a brass grid 4 having a transparency of 70%. Rubber packing ensures vacuum tightness and 30 μ copper foils and 10 μ iron foils were used with this design. This type of window was used by Bogdanov et al (Ref.3) in their studies o the polarization of neutrons produced in the $T(p,n)He^3$ reaction. Fig.4 shows a similar window in which the foil 1 is supported by a tungsten grid 2 made of 0.2 mm diameter wire. Fig.5 shows a design of a thin window used with a β-spectrometer. The cylindrical wall of the window 3 was made from aluminium ribbon 0.5 mm thick; rubber packing ensures vacuum tightness. This window was used by Vlasov and Rudakov (Ref.4) in their studies of the angular β-γ correlation in the case of Ba^{139}. Finally, Fig.6 shows the design of a gas target with a plane, thin wall 3 which was used by Bogdanov et al (Ref.5) in their studies of the spectrum of fast neutrons produced in the bombardment of deuterium by deuterons. Here a platinum foil 30 μ thick is soldered to the body. The foil is separated by a grid of tungsten

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wires 3. The window was found to withstand pressures up to 4 atm. The above devices were assembled and prepared for experiments by A.A.Shubin. There are 6 figures and 5 Soviet references.

SUBMITTED: May 27, 1959

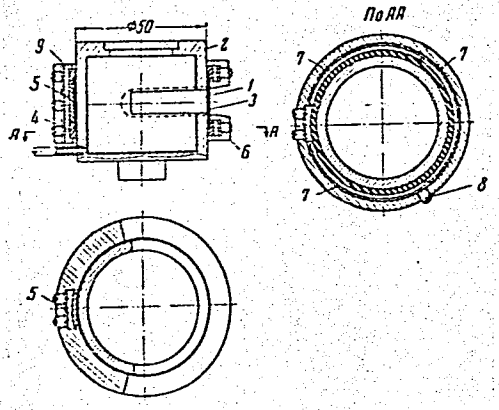

Fig.1.

Рис. 1. Газовая мишень с тонкой цилиндрической стенкой

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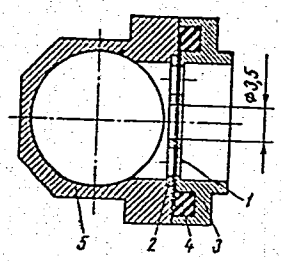

Рис. 2. Тонкая стенка счетчика с двумя поддерживающими решетками

Fig.2.

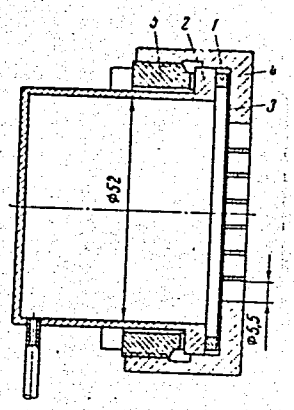

Рис. 3

Fig.3.

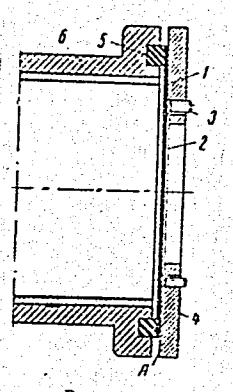

Рис. 4

Fig.4.

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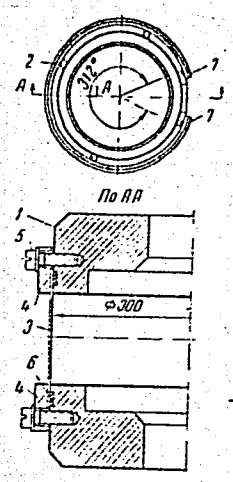

Рис. 5. Тонкая цилиндрическая стенка на камере линзового магнитного β-спектрометра

Fig.5.

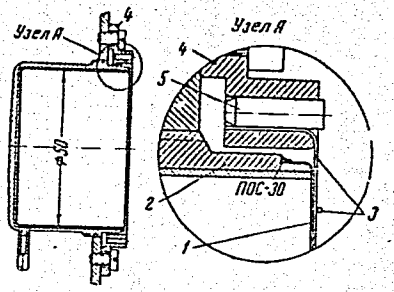

Рис. 6. Газовая мишень с припаянной тонкой стенкой, поддерживаемой сеткой из вольфрамовой проволоки ϕ0,25 *мм*

Fig.6.

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AUTHORS: Meshcherov, R. A., Mironov, Ye. S., Nemenov, L. M., Rybin, S. N., Kholmovskiy, Yu. A.

TITLE: Ion Acceleration in a Cyclotron With Azimuthal Variation of the Magnetic Field

PERIODICAL: Atomnaya energiya, 1960, Vol 8, Nr 3, pp 201-208 (USSR)

ABSTRACT: Thomas showed already in 1938 (see ref at end of abstract) that charged particle motion in cyclotrons can be made stable in case of radially increasing fields if one introduces azimuthal variations in field intensities. Technical difficulties and the discovery of the self-phasing principle delayed, however, the use of azimuthally varying magnetic fields. The authors tested this kind of field in 1957 on a model of the 1.5-m cyclotron (1/2 natural size). They showed that a combination of iron and current corrective elements can produce a wide

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range of desired field shapes. In 1958 the authors constructed new full-scale parts for the large cyclotron whose shortest 26.7-m high-frequency wavelength determined the upper limits of the attainable particle energies. The azimuthal variation of the magnetic field with a $\pm 15\%$ depth was achieved by means of three segments. The covers of the accelerator chamber with the corrective elements are shown on Fig. 1. To minimize the h-f losses, all iron surfaces were electrolytically covered by a $\sim 70\mu$ layer of copper. As seen, elements 5 were placed in the depressions between the segments and served to increase field intensity towards the periphery. Elements for fine correction were located on radii between 190 and 260 mm. Figures 2 and 3 show the central and off-center corrective windings. Characteristics of the beam were measured by means of two screened probes. An aluminum filter served to eliminate charged particles of low energy. The ions originated

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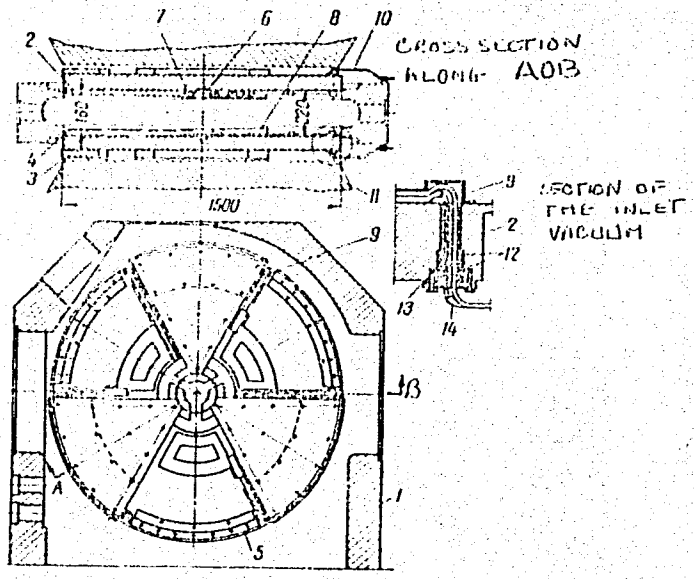

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Fig. 1. Covers of accelerator chamber with corrective iron elements and current corrective windings: (1) accelerator chamber; (2) covers of accelerator chamber; (3) outer corrective element; (4) sectors; (5) inner corrective elements; (6) central disks; (7) central corrective windings; (8) corrective windings in the troughs; (9) copper screens; (10) vacuum inlet for feeding windings; (11) poles of electromagnet; (12) insulators; (13) rubber seal; (14) chlor-vinile tube.

from a standard open-type source, and they were extracted into both dees. Two coils connected to a ballistic galvanometer measured the magnetic field with an accuracy of 0.05%. Figure 6 shows the azimuthal variations of the field for various values of radius R.

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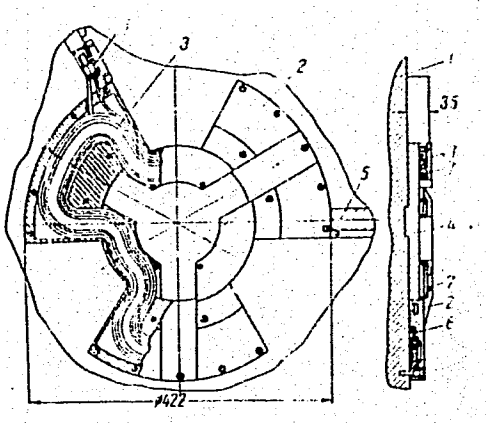

Fig. 2. Central corrective winding: (1) cover of accelerator chamber; (2) frame; (3) copper tube winding; (4) central disk; (5) copper screen; (6) detachable vacuum joint; (7) tubes for water-cooling of frame; (8) tightening plate.

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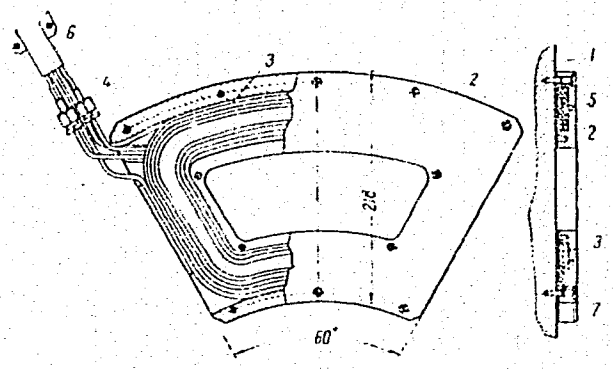

Fig. 3. Corrective windings in the troughs: (1) cover of accelerator chamber; (2) frame; (3) winding; (4) detachable vacuum joint; (5) tubes for water-cooling of frame; (6) cooper screen; (7) frame cover.

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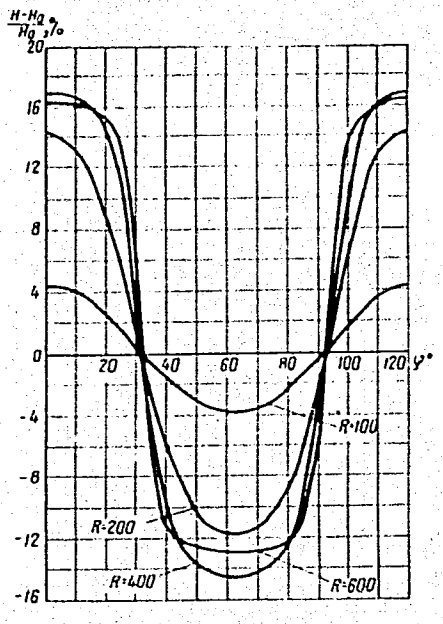

Fig. 6. Magnetic field intensity versus angle ϕ.

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Figure 8 shows the relationship between the beam current and the radius R. The relatively small decrease of current with radius in the cyclotron with azimuthal variations can be explained by smaller phase losses and strong vertical focusing. The authors note that the central corrective windings showed no favorable effects and produced (with both polarities of the added field) only a decrease of the probe currents. Using an absorber of 190 mg/cm^2 the authors measured an energy of 21.5 mev at a radius of approximately 650 mm, and this agreed with the calculated value within a 3% error. Energy spread of the ions was approximately $\pm$1.5%, while in the conventional cyclotron this spread was approx. $\pm$3%. The authors found also that at the 700 mm radius the beam acquired a much larger width (more than 15 mm) which enabled use of much smaller deflecting electrostatic potentials than those

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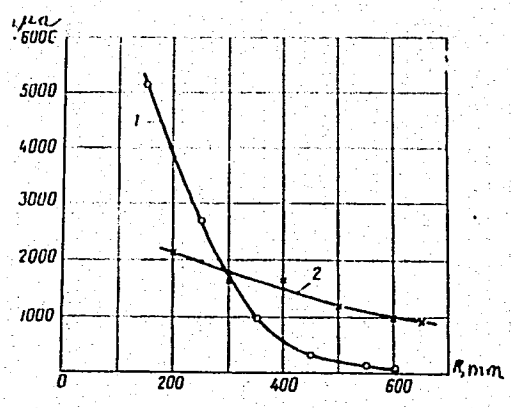

Fig. 8. Current versus radius of probe setting: (1) when device worked as conventional cyclotron; (2) for cyclotron with azimuthal variation of the magnetic field.

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